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furnish and deliver all items or perform all the services set forth or otherwise identified above and on any continuation sheets for the consideration stated herein. The rights and					including the additions or changes made by you which additions or changes are set forth in full above, is hereby accepted as to the items listed above and on any continuation											
obligations of the parties to this contract shall be subject to and governed by the following					sheets. This award consummates the contract which consists of the following											
documents: (a) this award/contract, (b) the solicitation, if any, and (c) such provisions, representations, certifications, and specifications, as are attached or incorporated by					documents: (a) the Government's solicitation and your bid, and (b) this award/contract.  No further contractual document is necessary. (Block 18 should be checked only when											
reference herein. (Attachments are listed herein.)  19A. NAME AND TITLE OF SIGNER (Type or print)						awarding a sealed-bid contract.)  20A. NAME OF CONTRACTING OFFICER										
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#### **CONTINUATION SHEET**

REFERENCE NO. OF DOCUMENT BEING CONTINUED EP-C-17-031/68HERC20F0054

PAGE 2 OF 2

NAME OF OFFEROR OR CONTRACTOR

TETRA TECH, INC.

EM NO.	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
(A)	(B)	(C)	(D)	(E)	(F)
	DUNS Number: 198549560		H		
	TOCOR: Donna Keclik Max Expire Date: 11/19/2021				
	Delivery: 11/19/2021				
	Period of Performance: 11/21/2019 to 11/19/2021				
	Fully Funded Firm Fixed Price Task Order				
0001	Task Order Issuance Line Item: Technical Support				119,873.
	for EPA/ORD Ecological Assessment Programs				
	Accounting Info:				
	19-E1-05P2-000B06XP1-2505-1905PEX501-002 BFY: 19				
	Fund: E1 Budget Org: 05P2 Program (PRC):				
	000B06XP1 Budget (BOC): 2505 DCN - Line ID:				
	1905PEX501-002 Funding Flag: Complete				
	Funded: \$119,873.69				
	Delivery-Invoice Payment Schedule shall not				
	exceed a frequency greater than once a month and				
	90% of the task order price. Acceptance for				
	invoicing is based on deliverable approval by the				
	TOCOR. For efficient processing IAW FAR clause				
	52.232-32, performance based payment invoicing				
	amounts will not be submitted until the TOCOR				
	provides deliverable approval. The TOCOR will				
	notify Tetra Tech within 14 days of submission of				
	a deliverable of EPAs intention to approve or				
	disapprove.				
	TOCOR: Donna				
	Keclik/(312)886-6766/keclik.donna@epa.gov				
	ALTOCOR: Belinda				
	Montgomery/(312)886-5949/montgomery.belinda@epa.go				
	V				

#### PERFORMANCE WORK STATEMENT

Tetra Tech, Inc.
Contract EP-C-17-031
PR-R5-19-00388
Task Order 68HERC20F0054 Solicitation 68HERC19R0088

TITLE: Indiana Department of Environmental Management (IDEM) Index of Biotic Integrity (IBI) for Diatom Communities

**SHORT TITLE for EAS: IDEM IBI for Diatoms** 

PERIOD OF PERFORMANCE: Date of award through 24 months following award

#### Task Order Contracting Officer Representative (TOCOR):

Donna Keclik U.S. EPA, Region 5 77 W. Jackson Blvd. Mail Code: (WW-16J) Chicago, IL. 60604 312-886-6766 keclik.donna@epa.gov

#### **Alternate TOCOR:**

Belinda Montgomery U.S. EPA, Region 5 77 W. Jackson Blvd. Mail Code: (WW-16J) Chicago, IL. 60604 312-886-5949 montgomery.belinda@epa.gov

#### **Background**

The Indiana Department of Environmental Management (IDEM) collects diatoms with other data (chemical parameters, nutrients, and habitat) to monitor the health of streams and rivers in Indiana. The Indiana Administrative Code [327 IAC 2-1-3]

http://www.in.gov/legislative/iac/iac\_title?iact=327 Article 2 has narrative biological criteria that states "all waters, except those designated as limited use, will be capable of supporting a well-balanced, warm water aquatic community." The water quality standard definition of a "well-balanced aquatic community" is "an aquatic community which is diverse in species composition, contains several different trophic levels, and is not composed mainly of strictly pollution tolerant species" [327 IAC 2-1-9]. To measure whether or not the biological community is meeting this definition, IDEM uses an Index of Biotic Integrity (IBI) for fish and macroinvertebrates. IDEM would like a third biological indicator for assessing aquatic life use.

The U.S. Environmental Protection Agency (U.S. EPA) evaluated IDEM's biological assessment program with the Midwest Biodiversity Institute in January 2014. The review provided

information on the strengths and limitations of the bioassessment program, resource allocation and prioritization for improving the bioassessment program, and integration of biological assessments to more precisely describe aquatic life uses and develop numeric biological criteria.

This project would involve examining the classification basis for IBI metrics (e.g., ecoregions, temperature, and stream size) and calibration of metrics for diatom communities.

#### **Benefits:**

The project will enhance the state of Indiana's monitoring strategy by adding another core indicator (diatom community structure) used to assess aquatic life use in:

- IDEM's Integrated Report, thus satisfying 305(b) and 303(d) reporting requirements to U.S. EPA.
- Watershed characterization projects which identify critical areas and chemical/physical stressors to the biological communities.
- Identifying improvements in the biological communities following watershed restoration efforts.

In addition, a diatom IBI will provide a more accurate assessment of ecological effects thus improving IDEM's diagnostic ability to identify causes of degradation in water quality. Diatoms are typically associated with nutrient availability and this assemblage IBI might become useful to evaluate direct biological responses to excessive nutrients.

# Scope of Work

The purpose of this project is to use IDEM diatom community data to develop an Index of Biotic Integrity.

The following scope describes the development and calibration of a diatom aquatic life indicator for the state of Indiana streams using the reference condition concept as the basis for defining the natural and stressor gradients. This hall include accounting for natural variability for individual metrics, testing of multiple metrics against the stressor gradient, scoring metrics on a continuous scale, combining all subsets of responsive and non-redundant metrics in index alternatives to be tested for sensitivity, and selection of the most sensitive, comprehensive, and rational index for application in assessment programs. This process shall include empirical analyses and subjective decision points, presented and modified iteratively.

#### Task 1: Communications and Administration

The contractor shall provide management and administrative support for the project throughout its duration. The contractor shall participate in calls with the U. S. EPA TOCOR to discuss points of contact, roles and responsibilities, Quality Assurance Project Plan (QAPP) protocols, timelines, the schedule of benchmarks, milestones and deliverables, establish dates and times for monthly calls (if necessary) and monthly technical progress reports and general task order administrative and technical information.

#### Task 2: QAPP

The contractor shall provide a QAPP that fully addresses the use of secondary data for purposes of this task order. The process for the QAPP development and review is:

- Within 15 business days after task order award, the Contractor shall submit for U.S. EPA review a draft QAPP documenting how quality assurance (QA) and quality control (QC) will be applied to the compilation, evaluation, analysis and use of environmental data.
- U.S. EPA will review the draft QAPP, and provide the Contractor with written approval or written comments within 5 business days after receipt of draft QAPP.
- The Contractor shall submit a final QAPP within 5 business days of receipt of the written comments on the draft QAPP, unless otherwise instructed by the U. S. EPA TOCOR.

## **QAPP** Requirements

The QAPP will be consistent with the use of secondary data. No new data shall be generated for this project. The QAPP shall provide enough detail to clearly describe objectives of the project supported by the task order, the type of data to be compiled or used under this task order to support the project objectives; the quality objectives needed to ensure that the data support the project objectives; and the quality assurance (QA) and quality control (QC) activities to be performed to ensure that any results obtained are documented and are of the type, quality, transparency, and reproducibility needed.

All major deliverables (e.g., Draft and Final Reports) produced by the contractor under this Task Order must include a discussion of any QA/QC that arose during the data compilation and assemblage process.

The contractor shall immediately notify the U.S. EPA TOCOR of any QA problems encountered that may impact the performance of this Task Order, with recommendations for corrective action.

#### Task 3: Data Transfer, QC, and Organization

This step involves the transfer of biological, chemical, and habitat information from the IDEM Assessment Information Management System (AIMS) to the Contractor who shall conduct basic QA/QC of the data (i.e., checking for values, locations out of range). IDEM will provide diatom data from samples collected between 2010 and 2017 and including diatom taxonomic identifications that are recognized by the Diatoms of the United States website. The Contractor shall reformat the data as needed to allow analysis of site, sample, and environmental data as well as calculation of community metrics that could be used in index development. The Contractor shall associate diatom taxa observed in state of Indiana with national databases of diatom traits. The traits will be used in the database to calculate community metrics. The Contractor shall also receive land use data for historical sites for the development of IBI metrics.

# Task 4: Develop a regionalization and classification scheme for Index of Biotic Integrity for diatoms

To begin development of the IBI for diatoms, the Contractor in consultation with IDEM will shall determine regionalization and classification scheme (ecoregion, watershed, temperature, stream size) for diatoms based on IDEM's available data (between 2010 and 2017). Classification will include assignment of site disturbance categories based on previous analysis for macroinvertebrate index development. Following this step, the Contractor shall calibrate the IBI model for diatoms.

The Contractor shall identify sites condition along a human disturbance gradient. The Contractor shall also provide analysis and justification for regionalization/classification scheme, through analysis of biological data in relation to natural characteristics of the sample site.

#### Task 5: Calculate diatom metrics and test for sensitivity to disturbance

The Contractor shall develop database queries for calculating community metrics based on sample characteristics and taxon traits. The Contractor shall test metric responsiveness along the disturbance gradient and within site classes defined in Task 4. This will be the basis of metric selection for the index.

The Contractor shall provide results of sensitivity tests for diatom metrics along the human disturbance gradient and within site classes.

# Task 6: Index compilation and testing

The Contractor shall combine diatom metrics that are responsive to the human disturbance gradient, represent different aspects of diatom sensitivity, which are not redundant, and can be explained in terms of response mechanisms in relation to stream stressors. The metrics will be scored on a common scale prior to combination so that each metric is weighted equally in the index. Several index options will be presented for review so that EPA and IDEM can review and approve the final index composition. It is possible that multiple indices will be formulated by site class.

The Contractor shall provide results of index compilation and testing. The index will be finalized after review and approval options by EPA and IDEM, due 15 months after Task Order award.

#### Task 7: Project reporting

The Contractor shall provide Draft and Final reports, MSWord 2010 that include project background, methods, results and conclusions. In addition, the Contractor shall provide recommendations on future steps to maintain the quality of the IBI model. The Final report will include review comments from EPA and IDEM on the Draft report.

The Contractor shall provide a draft report with structure and format as acceptable to the EPA. The Final report shall be delivered after the Contractor incorporates the review comments from EPA and IDEM. The draft report is due 20 months after award and the final report is due 24 months after award.

# **Deliverables and Schedule**

Task	Deliverable	Schedule
No.		
1	Progress Reports	Due Monthly
	Other Communication	Due upon request by the TOCOR
2	Draft QAPP	Due 15 business days after award of Task
		Order
2	Final QAPP	Due 5 business days of receipt of the
		written comments on the draft QAPP
3	Data Transfer, QC, and Organization	Due 2 month after award
4	Develop a regionalization and	Final Due for task 4 months after approval
	classification scheme for Index of Biotic	of QAPP
	Integrity for diatoms	
5	Calculate diatom metrics and test for	Due 12 months after Task Order award
	sensitivity to disturbance	
6	Index compilation and testing	Due 15 months after Task Order award
7	Draft Recommendations and reporting	Due 20 months after Task Order award
7	Final Recommendations and reporting	Due 24 months after Task Order award

AMENDMENT OF SOLICITATION/MODIFIC		CONTRACT ID CODE	PAGE	PAGE OF PAGES						
2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REG	UISITION/PURCHASE REQ. NO.	5. PROJEC	T NO. (If applicable)					
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6. ISSUED BY CODE	CAD	7. ADI	MINISTERED BY (If other than Item 6)	CODE						
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8. NAME AND ADDRESS OF CONTRACTOR (No., stree	t, county, State and ZIP Code)	() 9A.	AMENDMENT OF SOLICITATION NO.		-					
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CODE 198549560	FACILITY CODE	$ $ $ $ $ $ $ $ $ $	1/21/2019							
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X  C. THIS SUPPLEMENTAL AGREEMEN  D. OTHER (Specify type of modification	T IS ENTERED INTO PURSUAN		on office							
E. IMPORTANT: Contractor  is not  14. DESCRIPTION OF AMENDMENT/MODIFICATION  DUNS Number: 198549560  TOCOR: Despendent Modifier Many Event		ings, including s								
TOCOR: Donna Keclik Max Expi The purpose of this modifica modification signed by Raoul unchanged. Payment: Period of Performance: 11/21 Delivery-Invoice Payment Sch	tion is to incorp Scott on July 30 /2019 to 11/19/20 edule shall not e	porate ti 0, 2020. 021 exceed a	All other terms and of frequency greater than	conditic	ons remain					
and 90% of the task order pr by the TOCOR. For efficient invoicing amounts will not b Continued	processing IAW FA	AR claus	e 52.232-32, performanc	ce basec	l payment					
Except as provided herein, all terms and conditions of the 15A. NAME AND TITLE OF SIGNER (Type or print)	ne document referenced in Item 9	16A.	10A, as heretofore changed, remains unchanged and in full force and effect.  16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)  Andrea Dehne							
15B. CONTRACTOR/OFFEROR  (Signature of person authorized to sign)	15C. DATE SIGI			LECTRONIC SMENATURE	16C. DATE SIGNED 10/13/2020					

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 OF

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NAME OF OFFEROR OR CONTRACTOR TETRA TECH, INC.

(B)  TOCOR will notify Tetra Tech within 14 days of submission of a deliverable of EPAs intention to	(C)	(D)	(E)	(F)
submission of a deliverable of EPAs intention to		Н		
submission of a deliverable of EPAs intention to		. 1		
approve or disapprove.				
TOCOR: Donna				
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6. ISSUED BY	CODE		7. ADMINISTERED BY (i	f other than Item 6)	CODE		
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To All EPA	Contractors			9B. DATED (SEI  10A. MODIFICA  To all EPA ( 10B. DATED (SE	EITEM 11) TION OF CONTI	RACT/ORI	DER NUMBER
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	11. THIS ITE	M ONLY APPLIES TO	AMENDMENTS OF S	OLICITATIONS			
or (c) By separa RECEIVED AT by virtue of this communication	ng items 8 and 15, and returning ate letter or electronic communication which is THE PLACE DESIGNATED FOR THE RECE amendment you desire to change an offer al makes reference to the solicitation and this a	ncludes a reference to the sol EIPT OF OFFERS PRIOR TO ready submitted, such change mendment, and is received p	icitation and amendment num THE HOUR AND DATE SPE e may be made by letter or ele rior to the opening hour and d	bers. FAILURE OF YO CIFIED MAY RESULT I extronic communication, ate specified.	UR ACKNOWLE IN REJECTION ( provided each le	DGMENT OF YOUR	TO BE OFFER. If
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	C. THIS SUPPLEMENTAL AGREEMENT IS		NT TO AUTHORITY OF:				
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Except as provi	ded herein, all terms and conditions of the do	cument referenced in Item 9A	or 10A, as heretofore change	ed, remains unchanged	and in full force	and effect.	
<del></del>	ND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF Raoul D. Scott, Dire	CONTRACTING OFFIC	CER (Type or pri	nt)	Division
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# **52.204-25** Prohibition on Contracting for Certain Telecommunications and Video Surveillance Services or Equipment.

As prescribed in 4.2105(b) and in the applicability instructions in interim FAR Case 2019-009, insert the following clause:

# Prohibition on Contracting for Certain Telecommunications and Video Surveillance Services or Equipment (Aug 2020)

## (a) <u>Definitions</u>. As used in this clause—

*Backhaul* means intermediate links between the core network, or backbone network, and the small subnetworks at the edge of the network (e.g., connecting cell phones/towers to the core telephone network). Backhaul can be wireless (e.g., microwave) or wired (e.g., fiber optic, coaxial cable, Ethernet).

Covered foreign country means The People's Republic of China.

Covered telecommunications equipment or services means—

- (1) Telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities);
- (2) For the purpose of public safety, security of Government facilities, physical security surveillance of critical infrastructure, and other national security purposes, video surveillance and telecommunications equipment produced by Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities);
- (3) Telecommunications or video surveillance services provided by such entities or using such equipment; or
- (4) Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, in consultation with the Director of National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country.

#### Critical technology means-

- (1) Defense articles or defense services included on the United States Munitions List set forth in the International Traffic in Arms Regulations under subchapter M of chapter I of title 22, Code of Federal Regulations;
- (2) Items included on the Commerce Control List set forth in Supplement No. 1 to part 774 of the Export Administration Regulations under subchapter C of chapter VII of title 15, Code of Federal Regulations, and controlled-

- (i) Pursuant to multilateral regimes, including for reasons relating to national security, chemical and biological weapons proliferation, nuclear nonproliferation, or missile technology; or
  - (ii) For reasons relating to regional stability or surreptitious listening;
- (3) Specially designed and prepared nuclear equipment, parts and components, materials, software, and technology covered by part 810 of title 10, Code of Federal Regulations (relating to assistance to foreign atomic energy activities);
- (4) Nuclear facilities, equipment, and material covered by part 110 of title 10, Code of Federal Regulations (relating to export and import of nuclear equipment and material);
- (5) Select agents and toxins covered by part 331 of title 7, Code of Federal Regulations, part 121 of title 9 of such Code, or part 73 of title 42 of such Code; or
- (6) Emerging and foundational technologies controlled pursuant to section 1758 of the Export Control Reform Act of 2018 (50 U.S.C. 4817).

Interconnection arrangements means arrangements governing the physical connection of two or more networks to allow the use of another's network to hand off traffic where it is ultimately delivered (e.g., connection of a customer of telephone provider A to a customer of telephone company B) or sharing data and other information resources.

Reasonable inquiry means an inquiry designed to uncover any information in the entity's possession about the identity of the producer or provider of covered telecommunications equipment or services used by the entity that excludes the need to include an internal or third-party audit.

Roaming means cellular communications services (e.g., voice, video, data) received from a visited network when unable to connect to the facilities of the home network either because signal coverage is too weak or because traffic is too high.

Substantial or essential component means any component necessary for the proper function or performance of a piece of equipment, system, or service.

(b) Prohibition. (1) Section 889(a)(1)(A) of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Pub. L. 115-232) prohibits the head of an executive agency on or after August 13, 2019, from procuring or obtaining, or extending or renewing a contract to procure or obtain, any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system. The Contractor is prohibited from providing to the Government any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system, unless an exception at paragraph (c) of this clause applies or the covered telecommunication equipment or services are covered by a waiver described in FAR 4.2104.

- (2) Section 889(a)(1)(B) of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Pub. L. 115-232) prohibits the head of an executive agency on or after August 13, 2020, from entering into a contract, or extending or renewing a contract, with an entity that uses any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system, unless an exception at paragraph (c) of this clause applies or the covered telecommunication equipment or services are covered by a waiver described in FAR 4.2104. This prohibition applies to the use of covered telecommunications equipment or services, regardless of whether that use is in performance of work under a Federal contract.
  - (c) Exceptions. This clause does not prohibit contractors from providing—
- (1) A service that connects to the facilities of a third-party, such as backhaul, roaming, or interconnection arrangements; or
- (2) Telecommunications equipment that cannot route or redirect user data traffic or permit visibility into any user data or packets that such equipment transmits or otherwise handles.
  - (d) Reporting requirement.
- (1) In the event the Contractor identifies covered telecommunications equipment or services used as a substantial or essential component of any system, or as critical technology as part of any system, during contract performance, or the Contractor is notified of such by a subcontractor at any tier or by any other source, the Contractor shall report the information in paragraph (d)(2) of this clause to the Contracting Officer, unless elsewhere in this contract are established procedures for reporting the information; in the case of the Department of Defense, the Contractor shall report to the website at https://dibnet.dod.mil. For indefinite delivery contracts, the Contractor shall report to the Contracting Officer for the indefinite delivery contract and the Contracting Officer(s) for any affected order or, in the case of the Department of Defense, identify both the indefinite delivery contract and any affected orders in the report provided at https://dibnet.dod.mil.
- (2) The Contractor shall report the following information pursuant to paragraph (d)(1) of this clause
- (i) Within one business day from the date of such identification or notification: the contract number; the order number(s), if applicable; supplier name; supplier unique entity identifier (if known); supplier Commercial and Government Entity (CAGE) code (if known); brand; model number (original equipment manufacturer number, manufacturer part number, or wholesaler number); item description; and any readily available information about mitigation actions undertaken or recommended.
- (ii) Within 10 business days of submitting the information in paragraph (d)(2)(i) of this clause: any further available information about mitigation actions undertaken or recommended. In addition, the Contractor shall describe the efforts it undertook to prevent use or submission of covered telecommunications equipment or services, and any additional efforts that will be incorporated to prevent future use or submission of covered telecommunications equipment or services.

(e) *Subcontracts*. The Contractor shall insert the substance of this clause, including this paragraph (e) and excluding paragraph (b)(2), in all subcontracts and other contractual instruments, including subcontracts for the acquisition of commercial items.

(End of clause)